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ABSTRACT

Research has documented the genetic contribution of paternal alcoholism and Antisocial Personality Disorder as risk factors for adolescent deviant behavior, including substance abuse. Teens (n=147) between the ages of 12 and 19 years and their parents participated in the study. The sample consisted of 74 substance abusing teens/families drawn from inpatients at addiction treatment centers in San Diego and 73 nonabusing teens/families drawn from the same community. This study evaluated the relationship between a history of paternal alcoholism and paternal deviant behavior, and offspring deviant behavior among adolescent substance abusers and nonabusers. This relationship was found to differ for substance-abusing and nonabusing adolescents. Among abusers, paternal alcoholism and paternal deviant behavior provided significant independent contributions in predicting teen deviant behavior. Among nonabusing teens, paternal alcoholism significantly predicted teen deviant behavior, but paternal deviant behavior did not add predictive utility. Theoretical and clinical implications are discussed. (Author/AA)

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PATERNAL PSYCHOPATHOLOGY: RELATIONSHIP TO ADOLESCENT SUBSTANCE ABUSE AND DEVIANT BEHAVIOR

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Abstract

Research has documented the genetic contribution of paternal alcoholism and Antisocial Personality Disorder as risk factors for adolescent deviant behavior, including substance abuse. This study evaluated the relationship between a history of paternal alcoholism and paternal deviant behavior, and offspring deviant behavior among adolescent substance abusers and nonabusers. This relationship was found to differ for substance-abusing and nonabusing adolescents. Among abusers, paternal alcoholism and paternal deviant behavior provided significant independent contributions in predicting teen deviant behavior. Among nonabusing teens, paternal alcoholism significantly predicted teen deviant behavior, but paternal deviant behavior did not add predictive utility. Theoretical and clinical implications are discussed.

Introduction

While experimentation with alcohol and drugs, along with a variety of other deviant behaviors, can be part of normal adolescent development (Morrisey, 1987; Hawkins, 1982; Johnston et al., 1986), 10-30% of teens experience alcohol or drug problems which significantly impact later life (Newcomb & Bentler, 1988). Effective treatment for adolescent substance abusers is complicated by high rates of psychiatric comorbidity within clinical samples. The most prevalent concomitant diagnosis among substance abusing teens is Conduct Disorder (CD), which has consistently been associated with teen drug abuse (e.g., Jessor & Donovan, 1985; Newcomb & Bentler, 1988). While the incidence of CD in the general adolescent population has been estimated at 4-10% (Kazdin, 1987), estimates among clinical samples of substance abusing teens range from 40% to 60% (e.g., Dimileo, 1989; Monopolis et al., 1990; Brown et al., submitted). Diagnosis of CD independent of substance use behavior has been associated with poorer substance use treatment outcome as well as increased risk for the adult diagnosis of Antisocial Personality Disorder (ASPD) among clinical samples of substance abusing teens (Brown et al., submitted).

A multitude of biological, psychological, and social factors that have been implicated in the development of teen deviant behavior, including both CD and substance abuse. For example, family, twin, and adoption studies have clearly identified a genetic contribution to substance abuse risk in offspring of alcoholic fathers (e.g., Goodwin et al., 1974; Cotton, 1979;

Cloninger et al., 1981; Cadoret et al., 1986). Similarly, ASPD among fathers has been associated with increased risk for CD and ASPD among offspring (e.g., Cadoret, 1978; Cadoret et al., 1985; Cloninger et al., 1981).

The genetic influences of alcoholism and ASPD/CD are further complicated by evidence that one disorder increases the likelihood of the other disorder among offspring. Thus, paternal alcoholism and paternal ASPD each appear to increase risk in offspring for both substance abuse and CD (e.g., Cadoret et al., 1985; Cadoret et al., 1987; see Mustille, 1992, for review), although the exact nature of the contribution of paternal pathology to increased risk among offspring is unclear. Several possibilities exist. For example, paternal psychopathology can increase offspring risk for CD and substance abuse in a "generic" fashion. In this case, either paternal alcoholism or paternal deviant behavior would increase risk, but there would not be an additive effect. A second possibility is that paternal alcoholism and deviant behavior have additive and/or interactive effects in increasing risk for teen CD and substance abuse. In this case, having an alcoholic ASPD father would increase risk over and above the risk of either paternal disorder alone.

The present study begins to explore the genetic contribution of paternal alcoholism and paternal ASPD behaviors for substance abuse and CD behaviors among biological adolescent offspring. The following questions will be addressed:

1) What are the independent contributions of paternal alcoholism,

paternal ASPD, and the interaction of these factors in predicting adolescent CD behavior? and

2) Is the observed relationship between paternal psychopathology and teen CD behavior the same for substance-abusing and nonabusing teens?

Method

Subjects

147 teens (82 males, 65 females) between the ages of 12 and 19 (M = 15.5 years, sd = 1.5) and their parents participated in the study. 74 teens were substance abusers drawn from inpatient addiction treatment samples in San Diego, and 73 were nonabusing teens/families drawn from the same community so as to be comparable to the abusing teen sample on a variety of demographic dimensions and family history of alcoholism. The sample was predominantly Caucasian (83.0%), Protestant (29.9%) or Catholic (29.3%), and came from a wide range of socioeconomic backgrounds (M Hollingshead (1965) score = 30.2, sd = 14.7, range = 11-73).

Substance-abusing teens had an extensive history of both alcohol use (M lifetime use = 470.5 times) and illicit drug use (M lifetime use = 1041.0 times), while nonabusing teens had a history of no more than occasional or social use of alcohol (M lifetime use = 37.3 times) and drugs (M lifetime use = 27.3 times).

Procedure

As part of an ongoing longitudinal study (NIAAA #AA07033; S. A. Brown, Ph.D.), each adolescent completed a 90-minute, confidential, structured clinical interview (Brown et al., 1987;

Brown et al., 1989) assessing (among other things) family history of alcoholism, paternal ASPD behaviors, adolescent CD behaviors, and teen substance use/abuse history. Biological parents also independently and confidentially completed a structured interview and SCID by a separate interviewer to corroborate teen information and provide maximally reliable family data.

Data on family history of alcoholism was used to classify each teen as family history positive (FH+) or family history negative (FH-) for alcoholism, based on whether or not the teen's biological father met DSM-III-R-based criteria for alcoholism (APA, 1987). 48.6% of substance-abusing teens and 39.7% of nonabusing teens were classified as FH+ for paternal alcoholism. Information on paternal history of CD and ASPD behaviors was used to compute a summary score of total number of deviant (CD/ASPD) behaviors exhibited by the biological father ($\underline{M}$ = 1.9, sd = 2.4 for teen substance abusers; $\underline{M}$ = 2.0, sd = 2.4 for nonabusers).

Information on adolescent lifetime deviant behavior was used to compute two summary scores: total number of CD behaviors (CDTOTAL), and CD behaviors occurring independent of substance use involvement (CDINDEP). To be classified as CDINDEP, a behavior must have occurred prior to age 16 and prior to the onset of substance abuse, and it must have occurred at least once independent of substance use. Substance-abusing teens reported an average lifetime incidence of 5.9 (sd = 2.6) different types of CDTOTAL behaviors, and 2.6 (sd = 2.2) CDINDEP behaviors. Nonabusing teens reported an average of 1.6 (sd = 1.9) lifetime

CDTOTAL behaviors and 1.4 (sd = 1.8) CDINDEP behaviors.

Results

Bivariate correlations and multiple regression analyses were run separately for substance-abusing and nonabusing teens to evaluate the relationship between paternal alcoholism, paternal CD/ASPD behaviors, and teen CD behavior.

Among substance-abusing teens, bivariate correlations revealed significant relationships between paternal alcoholism, paternal CD/ASPD behaviors, and teen deviant behavior. Paternal alcoholism was related to paternal CD/ASPD behavior ($r = .27$, $p < .05$) and to teen deviant behavior ($r = .29$ for CDTOTAL, $r = .26$ for CDINDEP). Paternal CD/ASPD behavior was strongly related to teen deviant behavior ($r = .46$ for CDTOTAL, $r = .30$ for CDINDEP).

Among the nonabusing adolescent sample, a somewhat different pattern emerged. As with abusing teens, paternal alcoholism was related to paternal CD/ASPD behavior ($r = .23$, $p = .05$) and to teen deviant behavior ($r = .25$ for CDTOTAL, $r = .26$ for CDINDEP). Interestingly, however, paternal CD/ASPD behavior was not related to teen deviant behavior ($r = .02$ for CDTOTAL, $r = .08$ for CDINDEP).

Multiple regression analyses used CD behaviors independent of substance use (CDINDEP) as the dependent variable in order to control for a higher incidence of drug-related CD behaviors among substance-abusing teens. The regressions revealed that the contribution of paternal alcoholism and paternal deviant behavior in the prediction of teen deviant behavior differs for substance-

abusing and nonabusing teens.

Among substance-abusing adolescents, paternal alcoholism was predictive of teen CDINDEP scores (R Squared = .105, $p < .01$), and paternal history of CD/ASPD behaviors provided independent predictive utility (R Square change = .047, $p = .07$) over that achieved by paternal alcoholism alone. The interaction term (paternal alcoholism x paternal CD/ASPD behavior) did not further increase prediction (R Square change = .006).

Among nonabusing teens, paternal alcoholism significantly predicted to CDINDEP behaviors (R Square = .058, $p < .05$), but adding paternal deviant behavior (R Square change = .001) and the interaction term (R Square change = .014) did not significantly increase prediction of deviant behaviors of teens which occur apart from drug involvement.

Discussion

A genetic contribution to the development of teen deviant behavior, including substance abuse, has been demonstrated in a variety of studies. Paternal alcoholism and ASPD have been identified as risk factors for the development of both substance abuse and CD among teen offspring. The present study evaluated the relationship between paternal alcoholism, paternal deviant behavior, and offspring deviant behavior among adolescent substance abusers and nonabusers.

Results suggest that there is a relationship between paternal alcoholism, paternal CD/ASPD behavior, and teen deviant behavior, but that the relationship differs for substance-abusing and

nonabusing adolescents. Among abusing teens, the genetic contribution may be additive, such that early life history of paternal ASPD behavior increases prediction of offspring deviant behavior over and above that of paternal alcoholism. Among nonabusing teens, however, the relationship appears to be more generic: paternal CD/ASPD behavior does not increase prediction of teen offspring deviant behavior while paternal alcoholism does. A number of factors may influence the manifestation of teen deviant behavior which raise cautions regarding theoretical interpretations (e.g., environmental factors, exposure levels, etc.)

Nonetheless, these results, while preliminary, have both prevention and treatment implications. Teens at special risk, i.e., teens that have alcoholic and antisocial fathers, can be targeted for substance abuse prevention as well as preventative efforts to reduce deviant behaviors which may occur regardless of alcohol/drug involvement. Among teens in treatment for substance abuse, those with alcoholic and antisocial fathers are likely to have poorer treatment outcome since they are likely to exhibit a greater number of CDINDEP behaviors (Brown et al., submitted). Aiming intervention efforts at the specific components of their increased risk for relapse (e.g., encouraging prosocial activities that are enjoyable and fulfill thrill-seeking needs; focusing on the development of coping skills to circumvent impulsivity a la Mott et al., 1992) is likely to improve substance abuse treatment outcome for these teens.